

IN THE SPECIFICATION

Please amend the paragraph at page 3, lines 13-15, as follows:

In a first step ~~E1~~, an image signal undergoes spread spectrum by being multiplied by a PN (Pseudorandom Noise) sequence.

Please amend the paragraph at page 3, lines 16-18, as follows:

In a second step ~~E2~~, the image signal after spread spectrum undergoes frequency transformation (e.g., DCT transformation).

Please amend the paragraph at page 3, lines 19-21, as follows:

In a third step ~~E3~~, watermark information is embedded in the image signal by changing the values of specific frequency components.

Please amend the paragraph at page 3, lines 22-23, as follows:

In a fourth step ~~E4~~, the image signal undergoes inverse frequency transformation (e.g., IDCT transformation).

Please amend the paragraph at page 3, lines 24-26, as follows:

In a fifth step ~~E5~~, the image signal undergoes inversely spread spectrum (the image signal is multiplied by the same PN sequence as in the first step ~~E1~~).

Please amend the paragraph at page 4, lines 4-6, as follows:

In a sixth step ~~D1~~, the image signal undergoes spread spectrum by being multiplied by a PN (Pseudorandom Noise) sequence (the same PN sequence as in the first step ~~E1~~).

Please amend the paragraph at page 4, line 7-9, as follows:

In a seventh step ~~D2~~, the image signal after spread spectrum undergoes frequency transformation (e.g., DCT transformation).

Please amend the paragraph at page 4, line 10-12, as follows:

In an eighth step ~~D3~~, the embedded watermark information is extracted from the image signal while paying attention to the values of specific frequency components.

Please amend the paragraph at page 4, line 23, to page 5, line 10, as follows:

When an image that has suffered such attacks is input, the conventional technique recovers synchronization of a PN sequence by executing a process for estimating a PN sequence used in the first step ~~E1~~ at the time of embedding upon detection of watermark information. After that, the processes in the sixth through eighth steps ~~D1 to D3~~ are executed to extract the embedded watermark information. However, in order to recover synchronization of the PN sequence from the image signal alone, a search must be conducted by trying a process for detecting watermark information using a plurality of candidates of PN sequences and adopting a candidate that can be detected satisfactory. For this purpose, problems of increases in arithmetic operation volume and circuit scale are posed.